

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

TSM03-0945

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on _____

Signature _____

Typed or printed
name _____

Application Number

10/840,125

Filed

May 6, 2004

First Named Inventor

Ting

Art Unit

2811

Examiner

Ori Nadav

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

/Mary Adams-Moe/

Signature

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

Mary Adams-Moe

Typed or printed name

☒ attorney or agent of record.

Registration number 57,883

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☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

October 12, 2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.

Submit multiple forms if more than one signature is required, see below.

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Discussion of Issue 1:

Originally filed claim 16 recites a method of forming a semiconductor device including “forming a notched spacer alongside the gate electrode such that the notched spacer is thinner along the surface of the substrate” (emphasis added). Applicants have amended paragraph [0025] to recite this very language, to wit: “In other situations, a portion of the first dielectric layer 126 may remain on the side of the gate electrode 122, such that the notched spacer is thinner along the surface of the substrate, as illustrated in FIG. 1j.”

Examiner has asserted, “the amendment ‘such that the notched spacer is thinner along the surface of the substrate, as illustrated in FIG. 1j,’ is new matter” (Final Office Action dated July 12, 2007). Examiner’s assertion is contrary to MPEP 608.01(I), which states, “In establishing a disclosure, applicant may rely not only on the description and drawing as filed but also on the original claims if their content justifies it.” Reliance on originally filed claim 16 is self-evidently justified in this instance, because the asserted new matter is a verbatim quote of the disclosure in the originally filed claim.

Likewise, newly added Figure 1j is supported in the original disclosure, including original claim 16. MPEP § 608.01(I) states that if subject matter capable of illustration is originally claimed and it is not shown in the drawing, the claim is not rejected but applicant is required to add it to the drawing. Because original claim 16 constitutes a clear disclosure of the subject matter illustrated in figure 1j (i.e. figure 1j simply illustrates an embodiment in which the notched spacer is thinner along the surface of the substrate), figure 1j is proper and is not new matter. Because the amendment to paragraph [0025] and figure 1j are clearly disclosed in Applicants’ original disclosure (including original claim 16), the amendments do not constitute new matter and the written description requirement has been met.

Discussion of Issue 2:

As a corollary to the above “new matter” assertion, Examiner has rejected claims 16-28 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Regarding claim 16, Examiner has asserted that “the step of forming a notched spacer alongside the gate electrode, ‘such that a thickness of the notched spacer alongside the gate electrode is thinner near the substrate’ is not taught in the specification as originally filed” (Final

Office Action dated July 12, 2007). The below table demonstrates clear support for this claim element in the original disclosure, however.

<u>Limitations assertedly not taught in the specification as originally filed</u>	<u>Support in originally filed specification</u>
"the step of forming a notched spacer..."	Originally filed claim 16 recites "forming a notched spacer." <i>See also</i> , original Title, "Notched Spacer for CMOS Transistors." <i>See also</i> , original Abstract, "A notched spacer for CMOS transistors and a method of manufacturing is provided."
"... alongside the gate electrode ..."	Originally filed claim 16 recites forming the notched spacer "alongside the gate electrode." <i>See also</i> , originally filed figure 1c showing notched spacer 132 is formed alongside gate electrode 122, as described in original paragraph [0025].
"...a thickness of the notched spacer alongside the gate electrode is thinner near the substrate."	Originally filed claim 16 recites that the notched spacer is "alongside the gate electrode" and is "thinner along the surface of the substrate." <i>See also</i> , original Fig. 1c which shows a notched spacer 132 alongside the gate electrode 122, and wherein the thickness of notched 132 is thinner near the surface – in this illustrated embodiment, the thickness of the notched spacer 132 is substantially zero near the surface. <i>See also</i> original paragraph [0025] which clearly discloses that the thickness near the substrate need not be substantially zero, to wit: "a portion of the first dielectric layer (which forms notched spacer 132) may remain on the side of the gate electrode 122)," (parenthetical added).

Because all limitations of amended claim 16 were disclosed in the original filing,

Applicants respectfully traverse the rejection of claim 16. Since no independent ground was provided for rejecting claims 17-23, which depend from claim 16, the same arguments apply to these dependent claims and the rejection of claims 17-23 has been traversed.

Regarding claim 24, Examiner has stated that there is no support in the specification for removing "a portion" of the first layer along the substrate. Examiner has asserted that "the

figures and specification as originally filed teach to remove all of the first layer that lies along the substrate, and not simply a portion. Compare figure 1d and 1e, for example” (Final Office Action dated July 12, 2007). Frankly, Examiner has misread the claim and has overlooked the specification.

Claim 24 recites “removing at least a portion” of the first layer. Original figures 1d and 1e, reproduced below¹, clearly show that “at least a portion” of first layer 126 has been removed. In the illustrated example, “at least a portion” has included the entire portion of layer 126 which is alongside gate electrode 120 and near the surface of substrate 110. Because the phrase “at least a portion” encompasses “all,” the original figures provide full and enabling support for claim 24. For this reason alone, the claim limitation of “removing at least a portion of the first layer” is fully disclosed and supported.

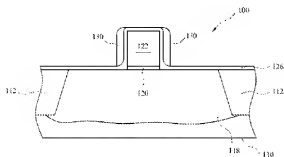


FIG 1D

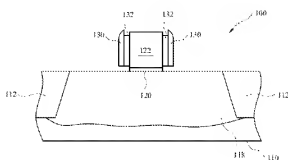


FIG 1E

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Furthermore, original paragraph [0025] clearly rebuts Examiner’s contention that “complete” removal was the only disclosed embodiment. Original paragraph [0025] states, “FIG. 1e illustrates the situation in which the first dielectric layer 126 is removed completely to the gate electrode 122. In other situations, a portion of the first dielectric layer 126 may remain on the side of the gate electrode 122” (emphasis added). Obviously, if “a portion” of layer 126

¹ For clarity, “formal drawings,” which were submitted as a replacement sheets on April 24, 2007, are reproduced herein. Applicants hereby represent that these figures accurately and faithfully represent the content of the originally filed informal drawings.

remains, then only a portion has been removed. Furthermore, even a casual review of figure 1c demonstrates that the region of dielectric layer 126 being discussed is the region along the surface of the substrate (which must be the case because the upper region of layer is covered by mask 130 and hence could not be partially or fully removed).

For the above reasons, the rejection of claim 24 is also traversed. Since no independent ground was provided for rejecting claims 25-28, which depend from claim 24, the same arguments as the independent claim 24 apply to these dependent claims. The rejection of claims 25-28 has been traversed.

The originally filed disclosure reasonably conveys to those of ordinary skill in the art that Applicants invented processes including those limitations recited in the claims. Applicants respectfully request that the final rejection of claims 16-33 be withdrawn and the present application be passed to allowance.

Respectfully submitted,

October 12, 2007
Date

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